

Amendments to the Specification

Please replace the paragraph located at page 6, lines 17-24 with the following text:

The value store electric power meter which can be used for simple and sound fee payment means by a SET electronic commercial transaction process using next generation credit and direct payment cards of EMV '96 mixed with the IC card reader and recorder, further comprises means such as a telephone, an Internet, a P-ATM (EMV '96) (Personal - Automated Teller Machine (Europay MasterCard Visa '96)), and a digital interphone for performing audio communication with a person in charge of the host server or transmitting an audible message to help the user with matters such as storage and a keypad for a user directly requesting the value to be stored.

Please replace the paragraph located at page 9, lines 23-27 with the following text:

In the present invention, algorithms of (1) a value store command, (2) a differential charge mode control command based on hours, days, months or seasons), and (3) use during days, weeks, or months and timer information check command (abnormal monitoring ~~are adopted~~) are adopted. These will be described with reference to FIGs. 1 through 3.

Please replace the paragraph located at page 14, line 24 through page 15, line 16 with the following text:

A voltage divider 6 adjusts 117, 220, and 240V AC voltages to be within the input voltage range of a voltage analog to digital converter (V-ADC). The range of the

voltage is selected by the ratio of two resistors which are serially connected. A V-ADC 7 is a circuit for converting an AC voltage analog signal into a 16 bit digital signal. A current analog to digital converter (I-ADC) 8 is a circuit for converting an AC current signal which flows through the shunt resistor 2 into a 16 or 20 bit digital signal. An electric power consumption operating circuit 9 calculates the electric power (Watt) by multiplying the digital signal of the V-ADC 7 by the digital signal of the I-ADC 8 and converts the multiplication result into a pulse number and width signal. The electric power consumption operating circuit 9 compares the phase of the voltage with the phase of the current, calculates an angle by which the two phases are different, and outputs a phase difference as a signal, thus applying differential charges to the things which temporarily use induction load. The token exchanger 10 reduces tokens according to the amount (Watt/hour) of the electric power consumed per unit time, requests new tokens from a ten unit token tank when the tokens inside the token exchanger 10 are consumed, and reduces the new tokens according to the amount of power consumption. If the ten unit token tank is consumed, 100 unit tokens are requested for the SVM to be described later and the 10 unit token tank is filled again. The tokens requested for the SVM 166 can be received through the authentication process of the SAM 164. An RTC (real time clock) and power consumption table 11 performs a differential operation of multi-step electric power charges according to an electric power supply and demand situation of 50%, 75%, 100%, 150%, and 200% based on a real time clock comprised of year, month, day, hour, minute, and second (YYMMDDHHMMSS).

Please replace the paragraph located at page 16, lines 23-31 with the following text:

An electric power meter for measuring electric power of a particular kind was described above. However, the electric power meter according to the present invention can measure the electric power of at least two kinds by including the voltage divider 6, the V-ADC 7, the I-ADC 8, the latch relay 1, and the shunt resistor 2 according to the kind of the electric power. Namely, when the voltage divider, the V-ADC, the I-ADC, the latch relay, and the shunt resistor are combined so that at least two kinds of power sources with different voltages can be selectively or simultaneously used, the respective amounts of current ~~being~~ are additionally measured and operated.

Please replace the paragraph located at page 18, line 6 through page 19, line 2 with the following text:

In order to prevent the use of a fabricated card other than an IC card legally issued by the electric power supplier or the electric power re-seller, the SAM 164 for authenticating the card is loaded into the electric power meter. When the card is inserted into the terminal, the terminal and the card authenticate each other. When the amount of money information on the card is transferred by the terminal as the credit value, the terminal operates according to the encryption process shown in FIG. 1. Accordingly, the use of the fabricated card is prevented. A method of volatilizing an encrypted key, thereby disabling the terminal, during the dismantling of the meter can be considered against the cryptographic attack of a hacker, for example, the dismantling of the value store electric power meter in

order to fabricate the terminal or the card. However, the encryption algorithm and the encrypted key inside the terminal have only an amount reduction key in which the credit value information is reduced according to the amount of the power consumption. Accordingly, it is not possible to increase the money or the credit value information. In particular, in the present invention, when a user/a subscriber contacts an ARS (Automatic Response Service) server through a telephone or a digital interphone in order to request a transfer of credit value, the use amount is selectively settled using credit card or bank account. The value transferring process starts within a range in which the payment is guaranteed. The process can also be performed through Internet. In particular, it is possible to automatically transfer the value when the value stored by the account automatic transfer contract between the electric power seller/the electric power re-seller and a financial institution is reduced to a certain scale, and for people who have never used a computer or information communication network. In particular, in the case of performing a payment request trade by an SET electronic trade process with a direct payment card, the server operating as a cybermall may put trade details into a digital envelop (DE), which has the effect of signing the trade details. Accordingly, the trade process cannot be denied or fabricated.

Please replace the paragraph located at page 20, lines 4-18 with the following text:

An electric power use mode which can differentially apply multi-steps of electric power use rates according to time zones of weekdays and weekends, seasons, and months in which the amount of credit value used is selected by a program and

automatically applied. In the electric power consumption mode table 11, various rates can be differentially applied. Rates can be differentially applied according to the time zones, ~~and the~~ characteristics of the supply and demand of electric power, and electric power supply and use. ~~for~~ For example, rates can be applied as follows: 100% at daytimes of weekdays, a discount of 75% before and after the daily work times of the weekdays, a discount of 50% at midnight, a premium of 200% at daily work times, and a premium of 300% at 2 to 4 p.m. in summer during which the use of air conditioners rapidly increases is applied by a real time clock (RIG). Since the separate TE 10 is applied with respect to the same amount of electric power use, the stored credit value is differentially applied. Accordingly, the consumption of electric power becomes optimal during each time zone. Thus, the efficiency of the supply and demand of electric power is maximized. Therefore, the electric power bill is reduced.

Please replace the paragraph located at page 22, lines 24-31 with the following text:

The transferal of the credit value and the added value and the monitoring of the legal use of the value are performed through an electric power modem. A power consumption sensor circuit is provided and power use information is recorded in a non-volatile memory (NVM) 15 in order to monitor the surreptitious use of electric power and punish illegal use without having to visit a place in which an electric power meter is installed and checking ~~lead or tartar sealing~~ a seal. Such a circuit can be periodically monitored by the ES and the AS, thus performing an electronic sealing function without checking the physical lead sealing.

Please replace the paragraph located at page 23, lines 8-16 with the following text:

The subscriber requests the transfer of credit value by contacting the ARS of the electric power seller or the electric power re-seller by telephone or a digital interphone 20 and a keypad 21, selecting the settlement by credit card or bank account, and selecting the payment of the transferred electric power credit value. Then, a credit value managing server is requested to transfer the credit value by the account number (AN) given by the server of a credit card company. The credit value managing server of the electric power seller calls the M-ID through the AS and the ES, transfers the credit value to the SVPM and stores the transferred credit value by performing the above-mentioned value storing processes.

Please replace the paragraph located at page 24, line 17 through page 25, line 14 with the following text:

A subscriber IC card 52 is issued to those who wish to receive the IC card, by using a master key IC card 51 of the system manager in an electric power reseller 50. After settling the credit value for things such as electricity, gas, water, hot water, and heat energy in cash or by credit card on the spot, a first credit value is stored on the IC card. The electric power credit value on the card is stored in the electric power meter by inserting the IC card into the value store electric power meter of a user 55. When the IC card is inserted into the gas, water, hot water and heat energy meters of the user 55, the credit value is stored in each meter. After the first credit value storage, further credit value/added value storage is performed

by the value transferring process using the electric power modem. The value transferring and storage can be performed using the telephone, the Internet, a P-ATM (EMV '96), and the value store electric power meter. The processes of transferring and storing the value are performed with the above-mentioned encrypted algorithm forming. The credit value/added value transferring channel is as follows. The subscriber record information is taken from the subscriber database of the host server of the electric power re-seller 50. The payment to a bank or a VAN (value added network) company is guaranteed, by a user selecting one among a credit card number, a direct payment card number, and a bank account number. The credit value information is encoded by the master key of the SAM. The ID of the subscriber value store electric power meter is called through the AS and LS networks. The SAM and the master key are mutually authenticated. Then, the credit value/added value information is transferred. The local surveillance unit (ES) downloads the electric power use record for a period of hours, days, weeks, or months from the value store electric power meter, monitors the state of electric power use and the balance of credit value on an hourly or daily basis, resets time, downloads the electric power use mode and program, and monitors the surreptitious and abnormal use of the electric power. Also, the amount of money calculation is performed between an amount of money calculation system 54 of an electric power seller 53 and the electric power reseller 50 by a method similar to the above-mentioned processes.